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Declaration under Rule 4.17:

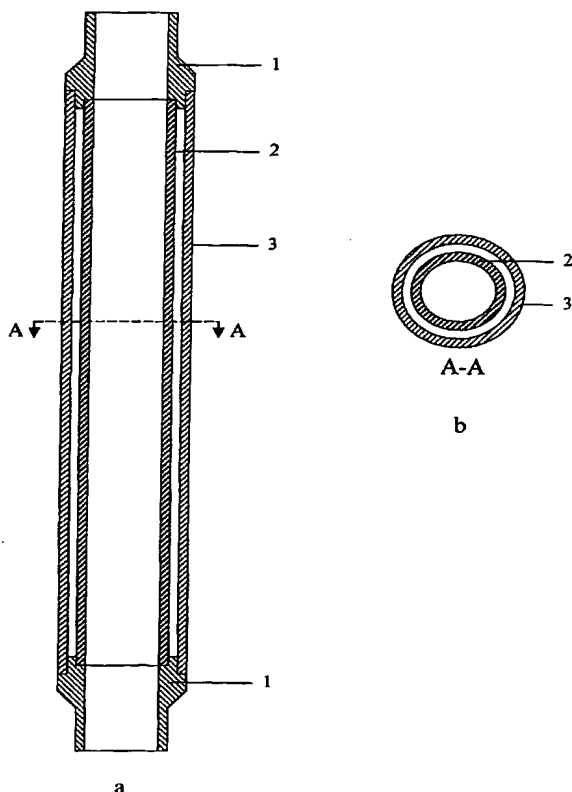
— of inventorship (Rule 4.17(iv)) for US only

Published:

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[Continued on next page]

(54) Title: CASING WITH ISOLATED ANNULAR SPACE



(57) Abstract: The invention is comprised of (see fig. 1) an inner pipe (2), and an outer pipe (3), and two end subs (1). An isolated circular hollowed space is contained in between these components. The isolated space can be used for transport of different medias down into the well, this can be vacuum, air, gas, acids, solids, tracers, or other well stimulating medias. The end subs (1) can be connected to the casing in the well and become an integrated part of the casing. The invention can be cemented on the outside like the casing can. The invention can be perforated after installed in the well.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

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PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/NO 2003/000418	International filing date (day/month/year) 15 December 2003	(Earliest) Priority Date (day/month/year) 16 December 2002
Applicant Kristiansen, Einar		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II)

3. ☐ Unity of invention is lacking (see Box No. III)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 3

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/NO 2003/000418

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: E21B 27/02
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: E21B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-INTERNAL, WPI DATA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6116343 A (R. VAN PETEGEM ET AL), 12 Sept 2000 (12.09.2000) --	
A	US 5595245 A (G.L. SCOTT, III), 21 January 1997 (21.01.1997) --	
A	US 5551513 A (B.W. SURLES ET AL), 3 Sept 1996 (03.09.1996) -- -----	

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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INTERNATIONAL SEARCH REPORT
Information on patent family members

30/10/2004

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PCT/NO 2003/000418

US	6116343	A	12/09/2000	EP	0978629	A	09/02/2000
				CA	2228415	A,C	03/08/1998
				DK	14298	A	04/08/1998
				GB	0107221	D	00/00/0000
				GB	0114032	D	00/00/0000
				GB	2323397	A,B	23/09/1998
				GB	2358033	A,B	11/07/2001
				GB	2360805	A,B	03/10/2001
				GB	9802350	D	00/00/0000
				ID	20007	A	00/00/0000
				NO	980438	A	04/08/1998
				US	5865252	A	02/02/1999

US	5595245	A	21/01/1997	NONE			
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US	5551513	A	03/09/1996	CA	2172583	A	13/11/1996
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